# PETROLEUM OPERATIONAL CONCEPT STUDY

## Modernizing the Army's Petroleum Distribution

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# Outline



- Study Overview
- Study Focus / Major Issues
- Assumptions
- Study Limitations
- Operational Architecture of Current Force
- Findings / Recommendations
- Army Modernization Campaign Plan
- Summary / Operational Architecture of Future Force
- Questions and Comments

# Study Purpose



**To develop a strategy that not only recommends corrections to current and near-term petroleum distribution shortfalls, but also provides efficient support to the Army as it transitions to the Future Force (through year 2020)**

# Study Focus / Major Issues:



- Identify required capabilities for petroleum distribution years 2012 through 2020 and how the Army can best attain these capabilities
- Identify the Current Force storage, distribution and retail refueling requirements
- Define the impact of homeland defense on Army Petroleum Operations
- Define DESC/Army interface and impact of expanding DESC roles (EA)
- Identify Petroleum management requirements

# Assumptions

(1 of 2)

CASCOM, DCD-QM

- The Army will continue transformation
- Equipment in development will be fielded on scheduled fielding dates
- Army fuel usage will continue to reduce as technology advances
- The Future Force will be fossil fuel-based
- The Army will retain the Title 10 inland petroleum distribution mission
- Future Combat Systems will have onboard / internal refueling and de-fueling capabilities

# Assumptions

(2 of 2)



- Petroleum movement tracking systems will be available to manage the Future Force sustainment distribution requisitions
- All weather aerial delivery platforms will be available to support the Future Force
- Current systems will remain in the Army's inventory beyond FY2020
- Military will continue to resource and utilize contractors
- Army will continue to require field testing of petroleum ground and aviation fuels.

# Limitations



- **Limited access to FORSCOM installations and units**
- **Limited Total Army Analysis-11 data was available for assessment and review**
- **Lack of US Air Force and Marines future bulk petroleum distribution support requirements**
- **Access to data and classified lessons learned from OIF**
- **Study Advisory Group (SAG) member availability – Deployments / taskings to support SWA war effort**

# Operational Architecture

## Current Force

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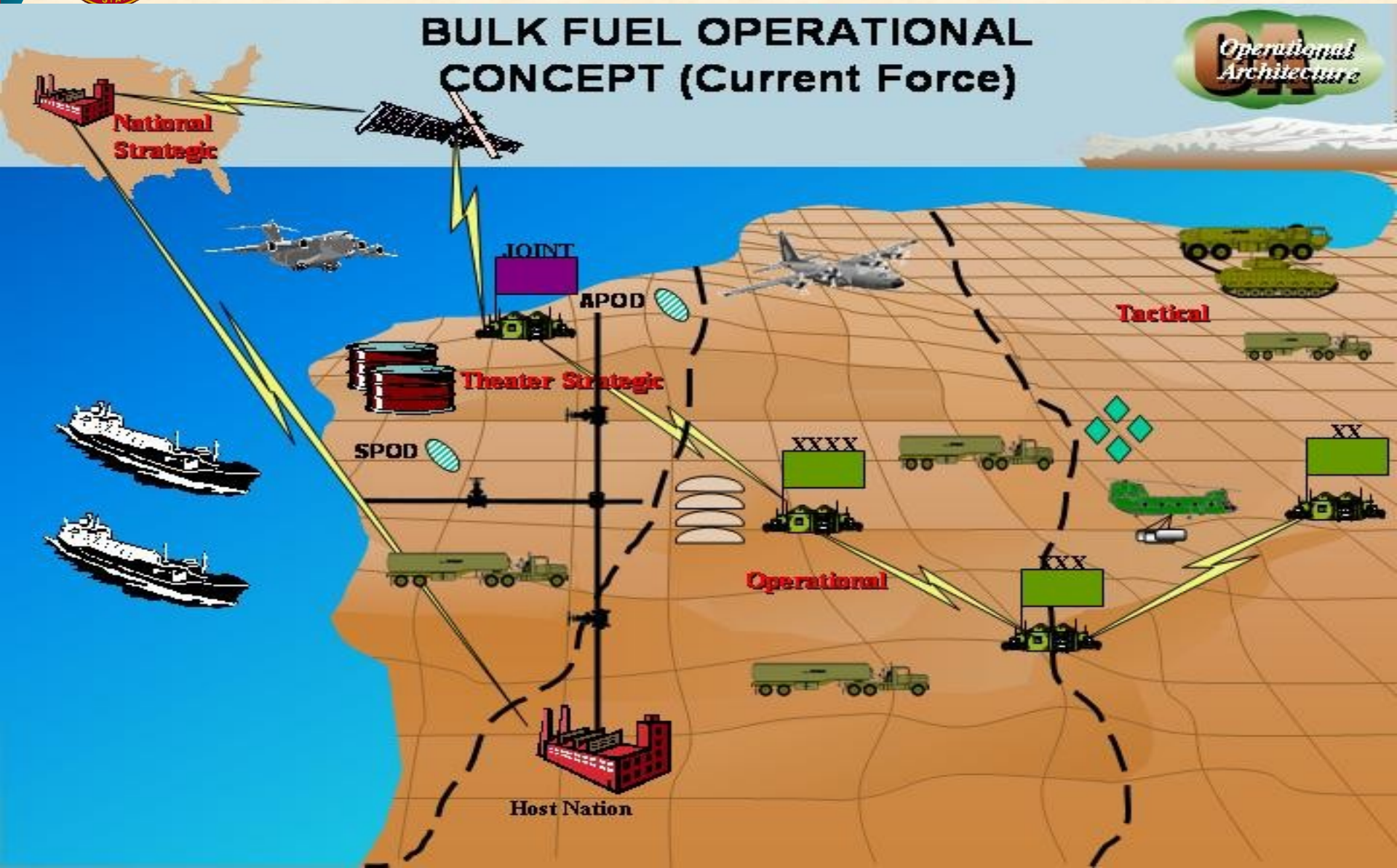


# Defense Energy Supply Center

CASCOM, DCD-QM

**Findings: Current Army doctrine does not account for DESC's emergi Executive Agent role and the Army's role, interface, and responsibili DESC are not clearly defined**

**Recommendations:**

- **Clarify Title 10 roles and responsibilities as a result of DESC Bulk Petroleum Executive Agent designation**
- **Incorporate EA changes in procedures, roles & responsibilities into Joint and Army doctrine**
- **Designate the Army Petroleum Center as the Army's service control point and link to DESC for all Army petroleum matters.**

# Point-of-Sale



**Findings: Army bulk petroleum point-of-sale is not clearly defined or established**

## Recommendations:

- **Designate the Corps Rear as the bulk petroleum point-of-sale or title transfer point**
- **Designate the Unit of Employment tactical storage point as the bulk petroleum [illegible] of-sale or title transfer point**

# Single Fuel on the Battlefield



**Findings: The current DoD single fuel on the battlefield concept requi modification**

**Recommendations:**

- **DESC assume additive injection mission - unburden warfighter**
- **Investigate the feasibility of procuring future combat systems / platforms capable of consuming multiple kerosene based fuels (COMJET)**
- **Eliminate dependency on fossil fuel energy source**

# Force Structure

CASCOM, DCD-QM

**Findings: Current pipeline and terminal operating force design will no rapid deployability, employability, flexibility, an log-print reduction re meet Future Force bulk fuel distribution capability**

**Recommendations:**

- **Modularize the current PPTO CO organizational functions**
- **Build all Army bulk fuel distribution force requirements directly from FASTALS Class IIIB storage and issue workloads**
- **Build external bulk fuel distribu force requirements thru DESC**

# Quality Surveillance

CASCOM, DCD-QM

**Findings: A current void exists for petroleum organizations to conduc expedient quality surveillance testing of petroleum products and capt**

## Recommendations:

- **Operationalize petroleum Quality Assurance / Surveillance (QA/QS) testing at the tactical level**
- **Realign QA / QS testing – Petroleum laboratory testing a DESC function**

# Automated Fuel Management

CASCOM, DCD

**Findings:** Current tracking methods are not conducive to support the Force and are not in compliance with Joint Vision 2020. The future fo heavily dependent on fully automating these functions to reduce man decrease the requirements for bulk petroleum distribution and storag Total Asset Visibility (TAV) and In Transit Visibility (ITV)

**Recommendations:**

- Procure automated systems to monitor, transmit, and receive bulk fuel storage and distribution data/status
- Incorporate automated fuel management capabilities into GCCS-A

# Alternative Fuels

CASCOM, DCD-QM

**Findings: Future Combat Systems fuel reduction is projected to be ne Hydrogen fuel cell technology in the commercial sector lends itself to adaptations and offers alternatives / reductions to the military's depe on fossil fuel requirements**

## Recommendations:

- **Conduct a joint services alternative fuel study to examine future energy source and potential energy source for the Future Force.**
- **Develop a prototype (hybrid) hydrogen fuel cell program to identify military adaptation of this emerging technology for future combat systems.**

# Homeland Defense

CASCOM, DCD-QM

**Findings: petroleum force structure does not account Current allocat the emerging homeland defense mission and potential implications / requirements for the Army to execute Title 10 inland petroleum distr mission in support of homeland defense.**

## Recommendations:

- **Identify organic Army petroleum storage and distribution capabilities to support homeland security efforts**
- **Develop Army Homeland Defense augmentation plans**

# Logistics Civil Augmentation Program

CASCOM, DCD-QM

**Findings: Advances in technology will require the employment of hig and technically proficient personnel to operate, maintain, & sustain F Combat System. LOGCAP, as a proven Current Force enabler lends its adaptation to support the Future Force**

**Recommendations:**

- **Sustain LOGCAP as an integral enabler of the logistics sustainment effort as a proven Current Force logistics capability**
- **Align LOGCAP contractors with the Unit of Employment (UE) with the capability of supporting the Unit of Action (UA) on an as needed basis.**
- **Establish contractor base to perform permanent / semi-fixed bulk petroleum storage, distribution, and QS functions**

# Army Modernization Plan

CASCOM, DCD-QM

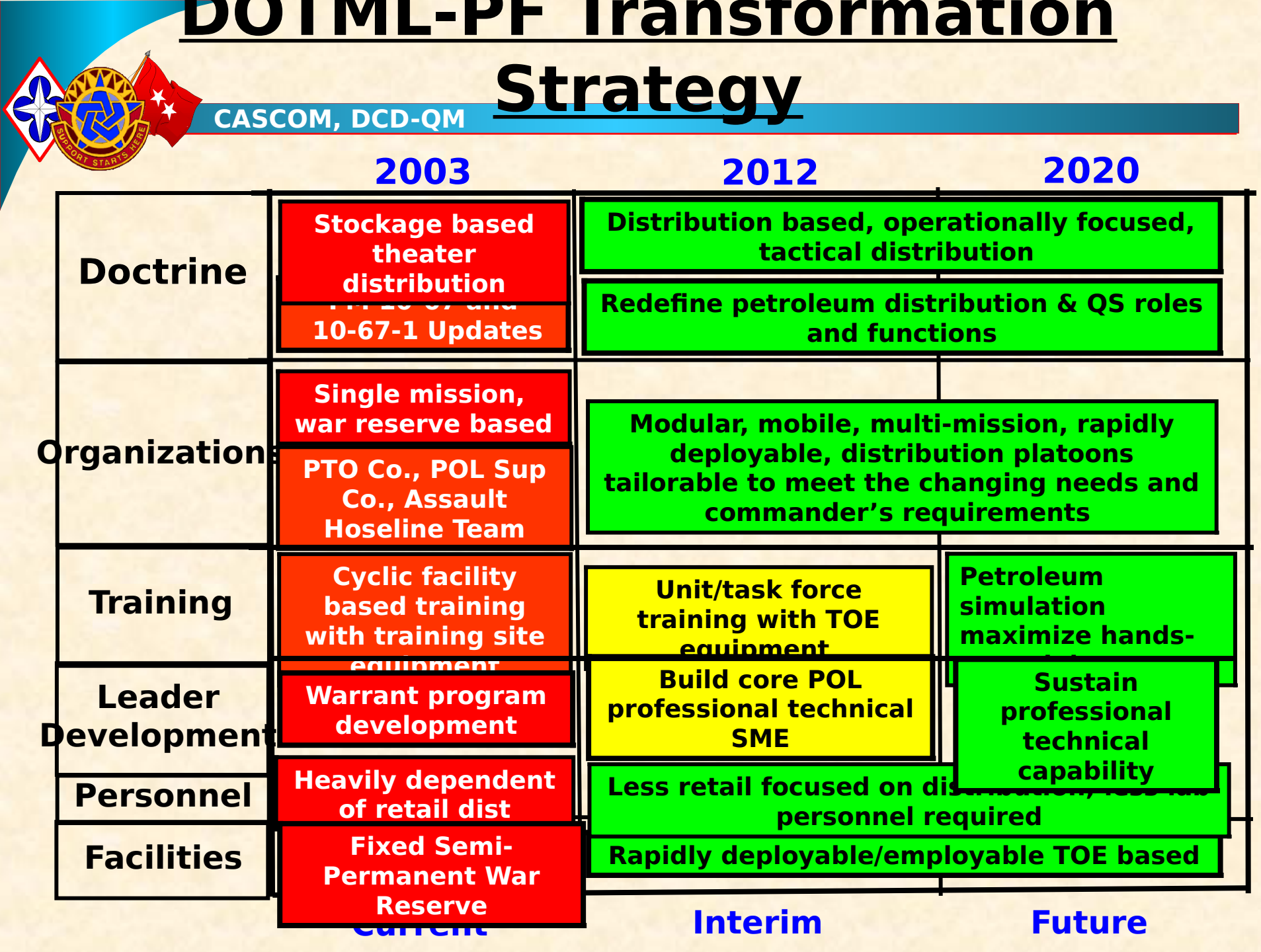
**Findings: By enlarge, the evolving Army Modernization Campaign P supports Future Force petroleum transformation**

**Recommendations:**

- **Multi-pressure flexible conduit**
- **Multi-modal Tankrack storage & distribution capability**
- **Common air / ground refueling system – tankrack based, identical refueling ports and nozzles**
- **Operational testing**
- **Real-time petroleum visibility**
- **FCS with organic refuel / de-fuel capability**
- **Emergency aerial resupply capability**
- **Leverage storage and distribution assets (DESC, contract, Army)**
- **Modular PTO petroleum structure**

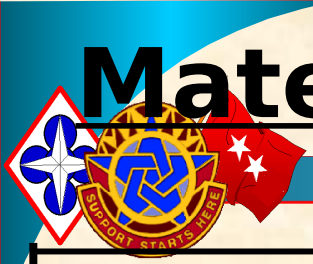
# DOTML-PF Transformation Strategy

CASCOM, DCD-QM



# Materiel Transformation Strategy

CASCOM, DCD-QM



| | 2003 | 2012 | 2020 |
|---|---|---|---|
| Conduits | IPDS | Divest Function to DESC | |
| | Assault Hoseline | RIFTS - High/Low Pressure Conduit | |
| Distribution | 7.5K, 5K Trucks | Tank Racks | |
| | HEMTT | FTTS | |
| | TPU, HTARS, FARP,FARE, AAFARS,VTPU | Interoperable Air / Ground Refueling Capability | |
| Storage | Tactical Petroleum Terminal (TPT) | | |
| | FSSP | | |
| | | Load Handling System Modular Fuel Farm (LMFF) | |
| QS/QA | Petroleum Test Kit (PTK) | GO/NO-GO QS Capability | |
| | Air Mobile Lab | PQAS | |
| | Fix Lab, Mobile Lab, & MBPL | Divest Function to DESC | |
| Management | Manual | TFAS | Integrated Automated Fu Management System |
| | Current | Interim | Future |

# Operational Architecture

## Future Force

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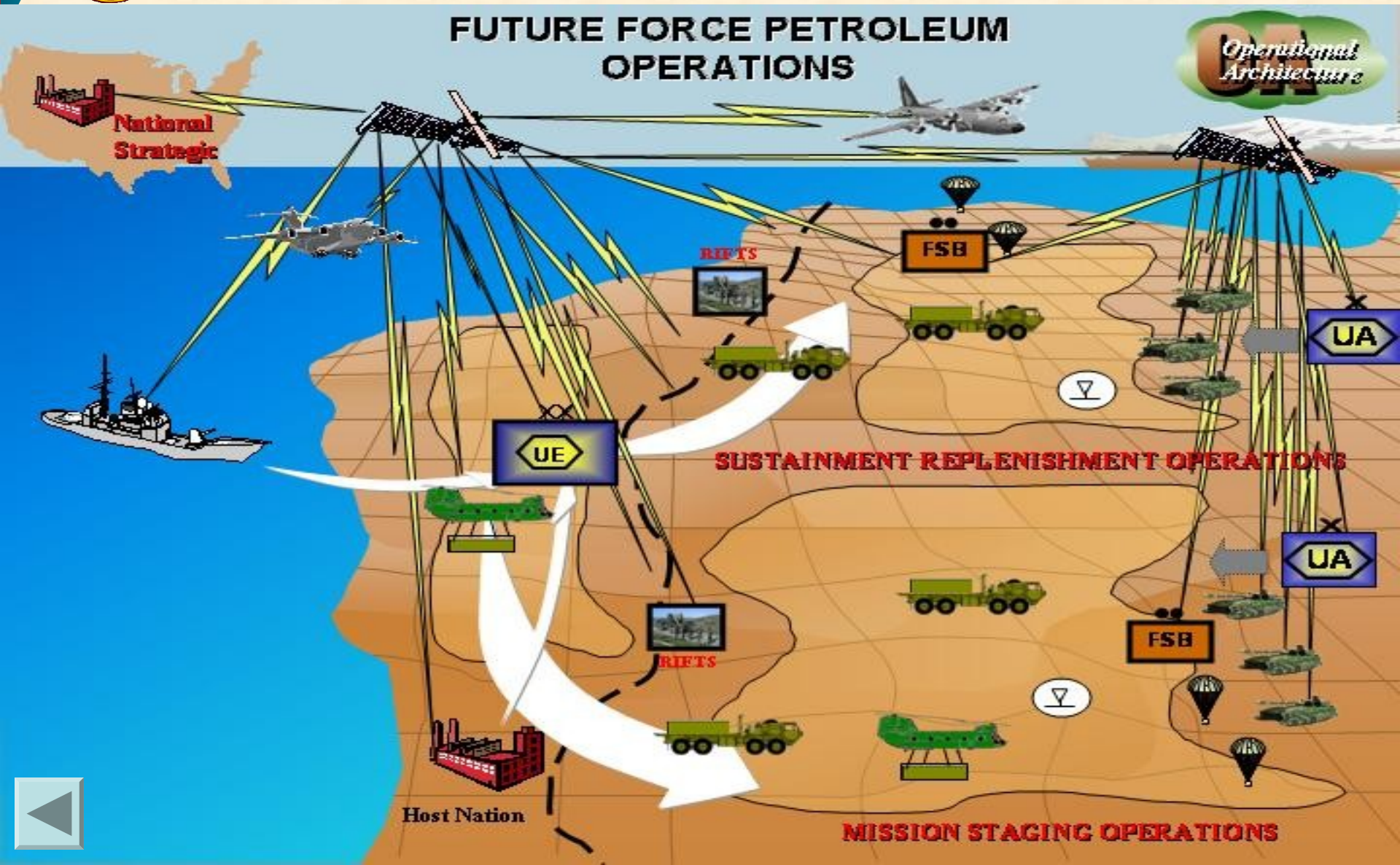

# Questions / Comments